

I claim:

1. A transfer connection device for wirelessly connecting a mobile phone and a hand-free handset, comprising:

a first connector coupling with the mobile phone; and

a second connector coupling with the hand-free handset for transmitting signals between the mobile phone and the hand-free handset through the first connector and the second connector in a wireless fashion.

2. The transfer connection device for wirelessly connecting a mobile phone and a hand-free handset of claim 1, wherein the first connector includes a first radio transmitting and receiving unit, a first antenna, a first modulation/demodulation unit, a first control unit, a first memory unit, a first processing unit, and a first connection interface; wherein

the first radio transmitting and receiving unit is controlled by the first control unit for receiving radio signals from the second connector and for emitting signals output by the first modulation/demodulation unit through the first antenna to the second connector;

the first antenna receives and transmits radio signals;

the first modulation/demodulation unit is controlled by the first control unit to modulate output signals from the first processing unit and transfer to the first radio transmitting and receiving unit, and to demodulate radio signals received from the first radio transmitting and receiving unit and transfer to the first processing unit for processing;

the first control unit controls and coordinates all other units in the first connector;

the first memory unit stores set values of the first connector and temporarily stores the received and transmitted radio signals;

5 the first processing unit is controlled by the first control unit for processing audio voice and control data of the mobile phone and providing to the first modulation/demodulation unit; and

the first connection interface allows a signal terminal of the mobile phone connecting the first connector, and is selectively a signal line or a socket.

- 10
3. The transfer connection device for wirelessly connecting a mobile phone and a hand-free handset of claim 1, wherein the second connector includes a second radio transmitting and receiving unit, a second antenna, a second modulation/demodulation unit, a second control unit, a second memory unit, a second processing unit, and a second connection interface;
- 15 wherein:

the second radio transmitting and receiving unit is controlled by the second control unit for receiving radio signals from the first connector and emitting signals output by the second modulation/demodulation unit through the second antenna to the first connector;

the second antenna receives and transmits radio signals;

the second modulation/demodulation unit is controlled by the second

control unit to modulate output signals from the second processing unit and transfer to the second radio transmitting and receiving unit, and to demodulate radio signals received from the second wireless transmitting and receiving unit and transfer to the second processing unit for processing;

the second control unit controls and coordinates all other units in the second connector;

the second memory unit stores set values of the second connector and temporarily stores the received and transmitted radio signals;

the second processing unit is controlled by the second control unit for processing audio voice and control data of the hand-free handset and transferring to the second modulation/demodulation unit; and

the connection interface allows a signal terminal of the hand-free handset connecting the second connector, and is selectively a signal line or a socket.